

Site Hazard Assessment Worksheet 1 Summary Score Sheet

Pillon Property

Site Information

Address:	15753 Renton-Issaquah Road SE Renton, WA 98059-6218		
County:	King	Tax Parcel:	0638100031
Cleanup Site ID:	4119	Latitude:	47.50168
Facility Site ID:	1292568	Longitude:	-122.13214

This site was assessed for the February 2016 update of the Hazardous Sites List.

Site Description

The Pillon property is located in a rural area of unincorporated King County east of Renton. It has been owned since at least 1977 by Charles E. Pillon. May Valley Park is adjacent to the northwest corner of the property. Renton-Issaquah Road (Route 900) is adjacent to the northeast corner of the property.

The parcel is 10 acres. A 3,080-square-foot, two-story house is south of the middle of the property. Accessory buildings include a carport and an equipment storage building. A large area of bare dirt west of the house is used for a variety of activities including dumping and burning of municipal and construction waste. Vehicles are stored east of the house on bare dirt. Public Health Seattle King County (PHSCK 2014) estimated that refuse disposal has occurred over 70 percent of the parcel (7 acres or 304,920 square feet) and up to 20 feet deep (6,098,400 cubic feet or 677,600 cubic yards). The edges of the property and the northeast corner are covered by grass and trees. Two ponds are located in the southwest corner of the property. Refuse has been observed in the ponds.

The property is served by King County Water District 90 (KCWD-90) but not by a municipal sewer system. A 1978 application for a septic system indicated a proposed location, but King County has no records of an installation permit, an as-built drawing, or maintenance information.

Site Background

The Pillon property has a long history of investigations and citations by county and state regulatory agencies. This section provides an overview of the issues that have been observed or investigated on the property.

The following activities have occurred on the Pillon property without permits:

- Receiving construction, demolition, and land clearing debris
- Scrapping metals
- Auto wrecking

- Incinerating waste
- Smelting of metals
- Storing asphalt trucks in active use
- Producing biodiesel.

King County Department of Development and Environmental Services (hereafter referred to by its current name, Department of Permitting and Environmental Review, DPER) first notified Mr. Pillon of waste disposal issues in 1993.

On April 20, 2000, King County Solid Waste (KCSW) sent Mr. Pillon a letter advising him that he was operating an unpermitted solid waste disposal/recycling facility against local codes. Mr. Pillon responded on June 6, 2000, by stating that he intended to accumulate “so-called solid waste,” that he was a “recycler of other people’s junk,” and that his recycling methods were “superior to that otherwise dictated by the county.”

On August 2, 2000, DPER sent a letter to Mr. Pillon listing the following violations, among other issues:

- Accumulation of inoperable/junk vehicle parts, yard waste, and debris
- Operation of an asphalt business in excess of home occupation regulations.

Between March 2000 and August 2006, the Puget Sound Clean Air Agency (PSCAA) received five complaints about asbestos release and outdoor burning. On September 5, 2008, King County Superior Court issued a default judgment of \$11,117.88 against Mr. Pillon on behalf of PSCAA.

On February 2, 2001, Seattle King County Department of Public Health (hereafter referred to as their current name, Public Health Seattle King County, PHSKC) issued a notice of health code violation stating that extensive and unpermitted dumping, accumulation, and storage of solid waste, including but not limited to junk vehicles, junk metal, roofing materials, and yard waste, constituted:

- Operation of a solid waste facility without a permit
- Failure to satisfy waste management requirements
- Failure to prevent unlawful solid waste dumping and to dispose at an approved facility.

In 2002, the Washington State Patrol (WSP) served a search warrant, finding nearly 100 junked cars on the Pillon property.

On November 22, 2002, DPER issued a notice and order to Mr. Pillon including the following citations, among others:

- Accumulation of inoperable vehicles, vehicle parts, scrap, garbage, junk, and debris
- Storage of commercial equipment, storage containers, and more than eight vehicles not owned by the resident
- Operation of an auto wrecking yard, landfill, and yard waste recycling businesses in violation of county code
- Clearing and grading without county permits.

In December 2002, the King County Department of Natural Resources and Parks, Water and Land Resources Division (WLRD) collected three surface water samples on the Pillon property from upgradient of the debris piles, downgradient of the debris piles, and May Creek downgradient of the property. Chromium, copper, lead, zinc and oils were detected in the surface water below the debris piles.

On January 15, 2003, King County Hazardous Waste staff submitted an environmental report (ERTS 531727) to Ecology noting that Mr. Pillon was operating a wrecking yard and a landfill, and, allegedly, a composting business, all without licenses or permits. The ERTS report included allegations of vehicles being buried and large areas of oil- and solvent-contaminated soils from vehicle dismantling. On August 18, 2003, the Pillon property was listed on Ecology's Confirmed and Suspected Contaminated Sites List as confirmed for metals in surface water and suspected for petroleum, antifreeze, metals, and gasoline in soil and ground water. An Early Notice letter was sent to Mr. Pillon listing the following violations:

- Containers of used vehicle fluids allowed to spill onto the ground and not cleaned up, resulting in contaminated soils
- Improper storage of vehicle parts such as engines, transmissions, and batteries
- Large amounts of garbage, debris, and solid waste stored improperly
- Improper vehicle crushing.

On February 24, 2003, PHSKC sent Mr. Pillon a Supplemental Notice of Health Code Violation, Civil Penalty Order, and Compliance Order listing the following issues:

- Disposal and storage of solid waste without a valid permit
- Storage of solid waste items not in clean, safe, nuisance-free containers
- Storage of garbage and rubbish outside approved containers and failure to remove garbage on a weekly basis
- Storage of yard wastes
- Improper storage of bulky wastes including old appliances, junk metal, vehicle hulks, machinery parts, used tires, barrels, scrap wood, concrete chunks, and construction/demolition debris
- Storage of excavated soil and fill materials containing solid wastes.

On May 7, 2003, Mr. Pillon filed an appeal of the DPER notice and order, confirming most of the allegations but claiming public benefit and arguing that the codes should be changed. His appeal was denied in most respects. On August 13, 2004, King County Superior Court issued a judgment against Mr. Pillon for costs of code compliance and abatement and civil penalties of \$33,550. On August 24, 2004, the hearing examiner determined that "the Appellant has failed to substantially comply with the terms of the order dated May 7, 2003" and issued \$65,250 in civil penalties.

In April 2006, Mr. Pillon sold two acres along the western edge of the original property. This two-acre portion is now parcel 0638100045.

On August 24, 2006, WSP conducted a search of the Pillon property under search warrant, accompanied by staff from Ecology, PSCAA, and Washington Department of Labor. Property conditions were similar to those previously observed. Mr. Pillon claimed to be manufacturing

biodiesel on his property. Metal smelting was also observed. WSP charged Mr. Pillon with a gross misdemeanor for wrecking vehicles without a license. Ecology notified Mr. Pillon of the following dangerous waste compliance issues:

- Failure to designate wastes
- Failure to respond to oil releases
- Failure to mark used oil containers
- Failure to keep records documenting chlorinated fluorocarbons
- Failure to label spent antifreeze.

On March 1, 2011, Eastside Fire and Rescue responded to a call regarding the property and found a “massive garbage pile” and an illegal burn of household items. They advised Mr. Pillon of the no-burn area and told him not to burn items in the future.

On May 7, 2012, an anonymous caller reported a “giant wrecking yard owned by a Chuck Tillon where the ground is covered in oil as well as draining diesel” and water runoff with discarded batteries (ERTS 633732). It was discovered that this site was being addressed by the Interagency Compliance Team (ICT), so the ERTS report was directed to the ICT.

On June 28, 2012, members of the ICT conducted a joint visit to the Pillon property and were denied access. The ICT included staff from EPA, Ecology, WSP, PSCAA, and King County (WLRD, PHSKC, and DPER). Mr. Pillon admitted to accepting wastes not generated on the property and to having fuel and oil spills. Observations from outside the property included piles of yard waste, concrete and asphalt, wood waste, and scrap tires; scrap vehicles; and a bus carcass.

On November 20, 2012, a site visit conducted by staff from EPA, PSCAA, PHSKD, KCSW, and King County Water and Land Resources Division found conditions unchanged. Storm water runoff near the driveway entrance had a visible oil sheen.

On January 16, 2013, staff from KCSW observed the Pillon property from the north and west property lines on neighboring properties. Their observations included construction/demolition waste, scrap metals, scrap vehicles and parts, yard debris, tires, crushed glass, plastic containers, wood waste, scrap boats, a large roll-off container from Independent Metals, and an apparently abandoned tour bus. Neighbors reported that large trucks dropped off metals and there was outdoor burning on the property.

On April 24, 2014, PHSKD conducted a site investigation and observed vehicles dumping solid wastes, including a paving company. There was run-off, described variously as coffee-colored or milk-colored, at the bottom of the driveway. Neighbors stated that they smelled plastic and metal burning about five nights a week.

On October 29, 2014, PHSKD issued an environmental health assessment that included the following conclusions:

- The site owner was violating King County Board of Health code by illegally operating a non-permitted solid waste disposal and recycling site.
- Physical contact with surface water on-site or leaving the site could be harmful to health.

- Site conditions presented a physical and safety hazard.
- Site conditions presented biological hazards including diseases from exposures to fecal matter or transmitted by mosquitoes and rodents.
- The landfill has no liners and does not meet grading requirements, so contaminants could leach to ground water.
- Waste incineration and metal smelting likely released chemicals and contaminated particles into the air.

PHSKC could not determine whether nearby residents drinking from private or Group B wells were drawing ground water potentially contaminated by the site, but they did note that the Group A municipal water system serving the area (King County Water District 90) does not draw from the potentially contaminated aquifer. PHSKC recommended the following actions:

- Site owner must immediately cease receiving waste, burning waste, smelting metals, and landfilling.
- The site must be cleaned up.
- PHSKC planned to perform a well survey because of concerns about neighbors drinking potentially contaminated ground water. (To date, the well survey has not been conducted.)
- Additional sampling of soil, sediment, ground water, and surface water should be performed, with analyses for a full suite of chemicals, including metals, volatile and semivolatile organic compounds, PAHs, polybrominated diphenyl ethers, petroleum hydrocarbons, chlorofluorohydrocarbons, and pesticides.

Repeated complaints from neighbors over the years have included the following:

- Piles of garbage increasing in size over time
- Smoke drifting from the property during burning, often smelling of metals or plastics
- Property devaluation because of the unsightly piles of garbage
- Contaminated runoff leaving the property.

On July 21, 2015, Ecology staff conducted a drive-by of the property and observed a bus and a pickup truck, each apparently abandoned, near the mouth of the driveway. The remainder of the property was obscured by vegetation.

Site Contamination

A variety of wastes, summarized below, have been observed to be disposed on the Pillon property, buried and in piles. There are no liners below the waste and no landfill cover. Metals and petroleum hydrocarbons have been detected in surface water on the property (PHSKC 2014). Reports of burning and odors indicate confirmed releases to air. Observations of discolored soil on the property indicate the potential for releases to ground water.

Type of Waste/Activity	Associated Contaminants
Junked vehicles (cars, boats, trucks, recreational vehicles) and machinery parts	Petroleum (gasoline, diesel, oil) Antifreeze (methanol, ethylene glycol, propylene glycol, and glycerol) Hydraulic fluid (glycols, esters, phthalates, organophosphates)

	Wood preservatives (copper) PCBs Asbestos
Scrap appliances and metal Metal smelting	PCBs Cadmium Chromium Copper Lead Mercury Nickel Zinc Asbestos
Storage of asphalt machinery and roofing materials	Polycyclic aromatic hydrocarbons (PAHs) Benzene Metals
Yard and wood waste	Pesticides Fertilizers Arsenic, copper, chromium Pentachlorophenol Dioxins and furans
Scrap tires	PAHs Metals
Construction, demolition, and land clearing debris	Solvents Asbestos Paints (lead and other metals) PCBs Glues and adhesives (diisocyanates, methacrylates, cyanoacrylates, phthalates, toluene, hexane, methanol, vinyl acetate)
Discarded batteries	Metals
Discarded plastic	Bisphenol A
Incineration	PAHs Dioxins and furans
Paint	Metals Chloroform Ethylbenzene Other VOCs
Transformer boxes	PCBs Asbestos Metals

PHSKC (2014) listed the following carcinogens presumed to be present on the property based on the activities that have occurred there:

Arsenic Asbestos Benzene 1,3-Butadiene Butyl benzyl phthalate	1,1-Dichloroethene 1,1-Dichloromethane 1,2-Dichloroethane 1,4-Dioxane Dioxins and furans	Di-(2-ethylhexyl) phthalate Polybrominated diphenyl ethers PCBs PAHs Tetrachloroethene
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Cadmium Carbon tetrachloride Chromium 1,2-Dibromoethane 1,1-Dichloroethane	Lead Mercury Naphthalene Nickel Di-n-butyl phthalate	Trichloroethene Vinyl chloride Ionizing radiation
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PHSKC (2014) listed the following additional chemicals of potential concern that are presumed to be present on the property:

Acetone Bisphenol A Butyl benzyl phthalate Carbon dioxide Carbon monoxide Carbon tetrachloride Chloromethane Copper Cyanide 1,2-Dibromoethane Dichlorodifluoromethane	cis-1,2-Dichloroethene trans-1,3-Dichloroethene Diethyl phthalate Ethylbenzene Hydrogen sulfide Methane 1-Methylnaphthalene 2-Methylnaphthalene Methyl tert-butyl ether Petroleum hydrocarbons Phenol	Propane Selenium Styrene Sulfuric acid Toluene 1,1,1-Trichloroethane Trichlorofluoromethane Xylenes Zinc
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On September 1, 2015, staff from King County Water Quality collected a sample of surface water runoff from the base of Mr. Pillon's driveway. The total metals concentrations of arsenic, copper, iron, lead, manganese, and zinc exceeded their MTCA cleanup levels as shown below.

Analyte	Sample Concentration (µg/L)	MTCA Method B Surface Water Cleanup Level (µg/L)
Arsenic	6.27	0.018 *
Copper	26.1	3.47
Iron	4,040	300
Lead	14.8	0.54
Manganese	144	50
Zinc	70.1	32.3

* Natural background concentrations of arsenic in surface water are likely higher than the Method B cleanup level.

Photographs of conditions on the Pillon property are provided at the end of this report. The photographs were obtained from Leonard DiToro, PHSKC.

Past Remediation Activities

Despite numerous notices of violations and penalties, there is no record of any cleanup activities at the Pillon property.

Current Site Conditions

Geology

The site is located within the greater May Creek basin, which runs in an east-west direction. Underlying soils comprise high-relief sedimentary and volcanic bedrock. Glacial sediments from the Vashon Glacier filled the surface through the remainder of the valley, including the site. Site altitude ranges from 490 feet at the southwest corner to 370 feet at the northeast corner, a difference of 120 feet. Well logs within two miles of the property indicate that soils are primarily sand and gravel with clay interbeds.

Ground Water

Ground water flow in May Creek Valley likely follows the direction of the valley. Based on topography, ground water beneath the Pillon property likely flows northeast toward May Creek.

Water is supplied to the property by KCWD-90, which obtains its water from the Cedar and Tolt Rivers and from a well field approximately three miles south-southeast of the site in an artesian aquifer at 42 to 195 feet below ground surface (bgs). The site is not within the 10-year wellhead protection zone for that well field.

There are 42 individual water wells within an approximate two-mile radius of the property. These wells are completed at depths ranging 30 to 502 feet bgs. The closest private well is approximately 500 feet northeast of the property (probably downgradient) and is completed at 192 feet bgs.

The well log for one well within the two-mile radius indicated that it was used for irrigation. Based on the zoned property size of 5 acres, it was assumed that this well irrigates 5 acres.

Surface Water

The site lies within the watershed of Tributary 0291A, which drains into May Creek and ultimately to Lake Washington. The May Creek watershed lies within the Cedar-Sammamish Water Resource Inventory Area (WRIA 08). Surface water on the site presumably follows the topography downhill toward May Creek from southwest to northeast. Two ponds are located at the southwest corner of the property, but there is no information regarding whether they are connected to the drainage ditches that drain off the property. Debris has been observed in the ponds.

A catch basin was observed on the property by DRNP in 2002, but the location is not known. Two discharge streams of runoff were observed during a rainfall event in April 2014. One is a seasonal ditch running northward along the western edge of the site and discharging to a property adjacent north (parcel 0223059043) and to May Valley Park (parcel 0223059097). Runoff also flows down the driveway toward Route 900, where it enters a drain, travels underground approximately 100 feet, and empties into a shallow ditch that eventually discharges into Tributary 0291A. The tributary runs 500 feet and discharges into May Creek.

Surrounding Area

The parcel and surrounding parcels are zoned rural with one dwelling unit per 5 acres (RA-5). There are residences surrounding the property. May Valley Park is adjacent to the northwest corner of the property. May Valley Park is described in more detail under Ecological Setting. The closest home is 200 feet east of the site.

May Valley Park is adjacent to the northwest corner of the Pillon property. Walking, biking, and horse trails traverse the park. One trail exits the park at the access road on the northern boundary of the Pillon property, which is used by customers dropping off waste at the Pillon property.

Tributary 0291A lies 330 feet northeast of the property, and May Creek lies 1,000 feet northeast of the property. May Creek is used for swimming and rafting, and it supports Coho and sockeye salmon and cutthroat and rainbow trout. Historically, the creek supported Chinook salmon and bull trout, both of which are listed as threatened under the Endangered Species Act.

Special Considerations for Scoring

Surface Water

The surface water samples collected in September 2015 confirm a release to surface water .

Air

Volatile chemicals are likely present on the property and there is the potential for metals and semivolatile chemicals in dust, however this pathway was scored based on smoke emissions from the burning activities observed on site.

Groundwater

The likelihood of groundwater contamination is high, but there are no data to verify it. This pathway was scored based on no evidence of release.

Route Scores

Route	Human Health	Environment
Surface Water	29.9	53.0
Air	36.2	15.9
Groundwater	43.6	

Overall Rank: 1

References

SHA Toxicity Database	Ecology. 1992. Toxicology database for use in Washington ranking method scoring. Prepared by: Science Applications International Corporation, Olympia, WA. Prepared for: Washington State Department of Ecology, Olympia, WA. Publ. no. 92-37.
Precip Map	King County. 2011. King County precipitation map. Produced by King County Department of Natural Resource Protection. Source: nationalatlas.gov . November.
Scoring Manual	Ecology. 1992. Washington ranking method, scoring manual. Washington State Department of Ecology, Olympia, WA. Publ. No. 90-14. Revised April 1992.
iMap	King County i-map. Available at: http://gismaps.kingcounty.gov/iMap/ .
Geo Map	Washington interactive geologic map. Available at: http://www.dnr.wa.gov/ResearchScience/Topics/GeosciencesData/Pages/geology_portal.aspx .
Water System Data	Drinking water system data. Available at: http://www.doh.wa.gov/DataandStatisticalReports/EnvironmentalHealth/DrinkingWaterSystemData . Washington State Department of Health, Olympia, WA.
Well Log Viewer	Washington State well log viewer. Available at: https://fortress.wa.gov/ecy/waterresources/map/WCLWebMap/default.aspx . Washington State Department of Ecology, Olympia, WA.
Priority Habitat Map	Priority habitat and species map. Available at: http://apps.wdfw.wa.gov/phsontheweb/ . Washington Department of Fish and Wildlife, Olympia, WA.
CAPS	Missouri Census Data Center. Circular Area Profiles (CAPS). Available at: http://mcdc2.missouri.edu/websas/caps.html . Missouri State Library.
NOAA	NOAA Climate Data Online Search. National Centers for Environmental Information, National Oceanic and Atmospheric Administration. Available at: http://www.ncdc.noaa.gov/cdo-web/search .
Ecology (2006)	Ecology. 2006. Dangerous waste compliance inspection at the Pillon property. RCRA ID# (none). State of Washington, Department of Ecology, Bellevue, WA. August 24.
KCEHSD (2013)	King County Environmental Health Services Division. 2013. Memorandum from J.L. Fahle to R. Welyczko re: Charles Pillon property – enforcement history and recommendations. May 2.
KCHE (2003)	King County Hearing Examiner. 2003. Report and decision, Department of Development and Environmental Services File No. E0000706. Office of the Hearing Examiner, King County, Seattle, WA. May 7.
PHSKC (2014)	PHSKC. 2014. Draft environmental health assessment for parcel no. 063810-0031, unincorporated King County, 15753 Renton-Issaquah Road SE, Renton, Washington 98059. Prepared by Rhonda S. Kaetzel, Environmental Services Division, Public Health Seattle and King County, Seattle, WA. October 29.
SKCDPH (2001)	Seattle King County Department of Public Health. 2001. Notice of health code violation; civil penalty order; compliance order (notice and order). Seattle-King County Department of Public Health v. Charles E. Pillon, Case No. CO0000231. February 2.

SKCDPH (2003)	Seattle King County Department of Public Health. 2003. Supplemental notice of health code violation; civil penalty order; compliance order (notice and order). Seattle-King County Department of Public Health v. Charles E. Pillon, Case No. CO0000231. February 24.
SCWKC (2004)	Superior Court of Washington for King County. 2004. Judgment against plaintiff for costs of code compliance and abatement and civil penalties. Chuck Pillon v. King County, No. 03-2-06058-5 KNT. August 13.
SCWKC (2008)	Superior Court of Washington for King County. 2008. Default judgment. Puget Sound Clean Air Agency v. Charles Pillon, No. 08-2-17171-0 KNT. September 5.

Worksheet 2 Route Documentation

Site Name: Pillon Property
CSID: 4119
FSID: 1292568

1. Surface Water Route

Substances Used for Scoring

Methylene chloride, PCBs, copper, lead, mercury

Basis for Selection of Substances

Substances observed in surface water samples or suspected to be present on site

Management Units for Scoring

Surface runoff leaving site

Basis for Selection of Management Units

Metals and oils have been detected in surface water leaving the site. Discolored water and water with sheen has been observed leaving the site.

2. Air Route

Substances Used for Scoring

PCBs, arsenic, cadmium, mercury

Basis for Selection of Substances

Substances suspected of being present on site

Management Units for Scoring

Smoke from on-site burning

Basis for Selection of Management Units

Burning has been observed on site. Neighbors have reported odors of metal and plastic burning.

3. Ground Water Route

Substances Used for Scoring

Benzene, TCE, PCBs, cadmium, mercury

Basis for Selection of Substances

Substances suspected of being present on site

Management Units for Scoring

Soil

Basis for Selection of Management Units

Spills and discolored soils have been observed on site. Soil contamination can leach to groundwater.

Figures

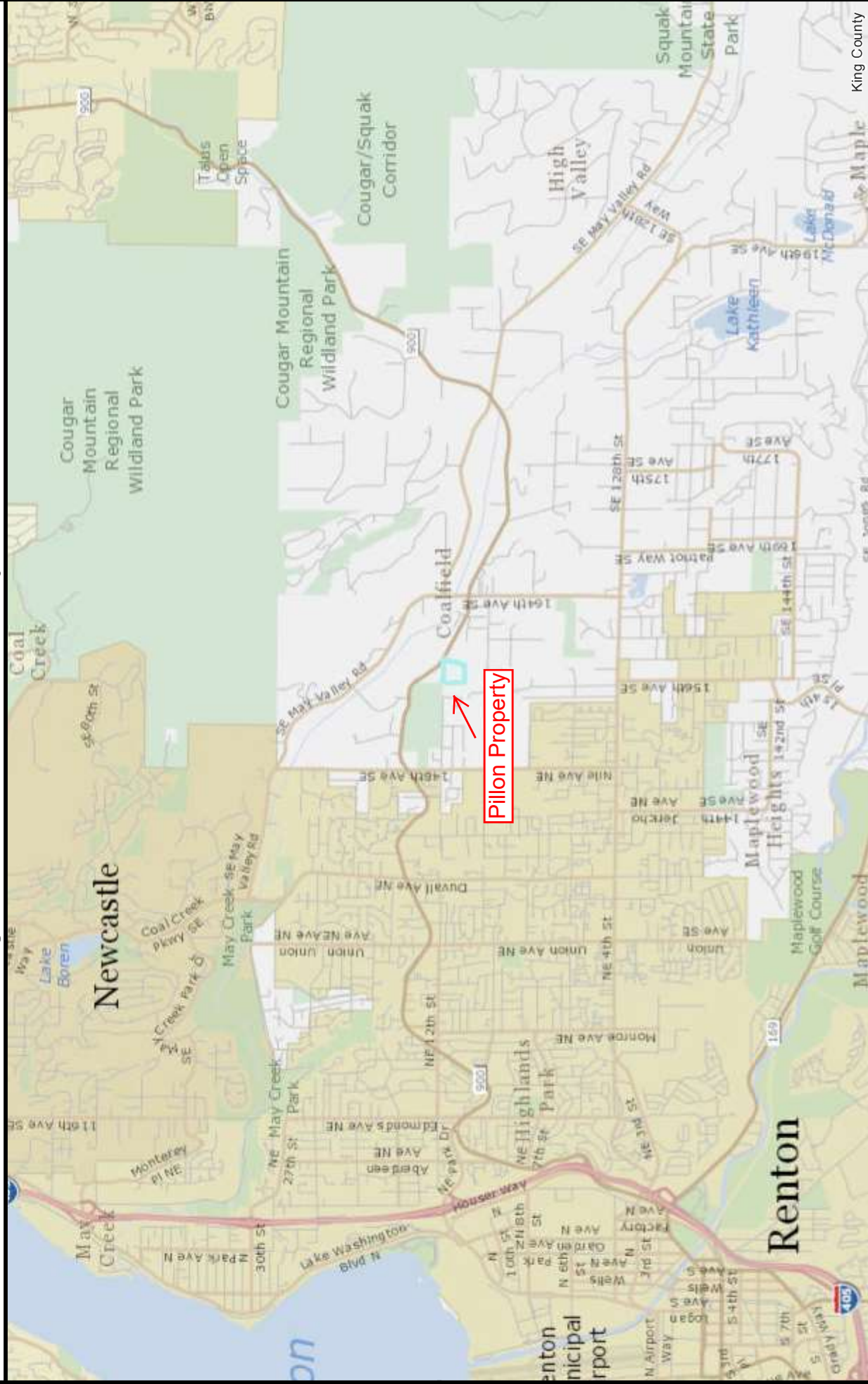
Figure 1. Pillon Property Location

Figure 2. Pillon Property Vicinity

Figure 3. Pillon Property Aerial View

Figures 4-8. Photographs of the Pillon Property (courtesy of PHSKC)

Figure 1. Pilon Property Location

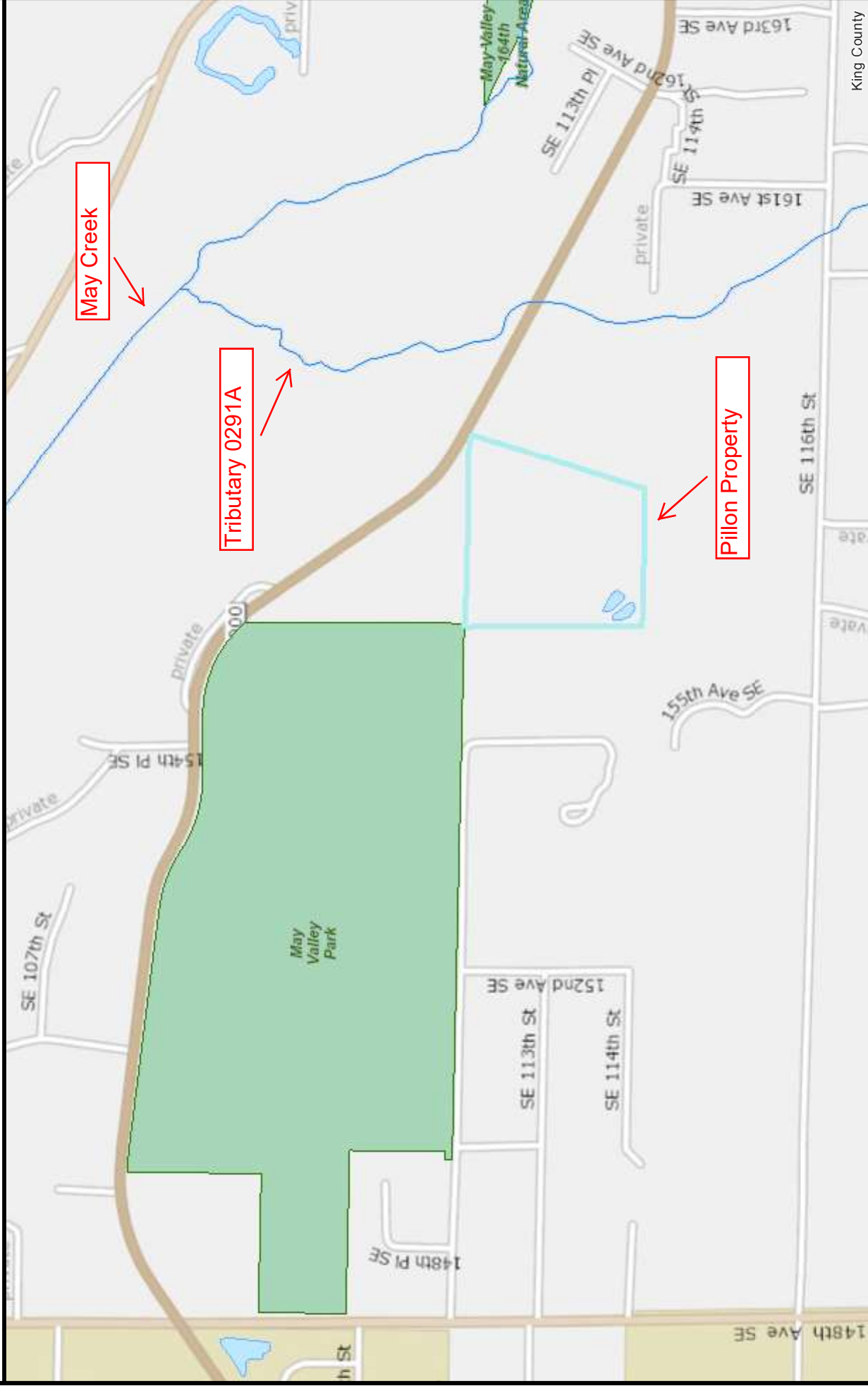


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Date: 7/24/2015

Notes:

Figure 2. Pillon Property Vicinity

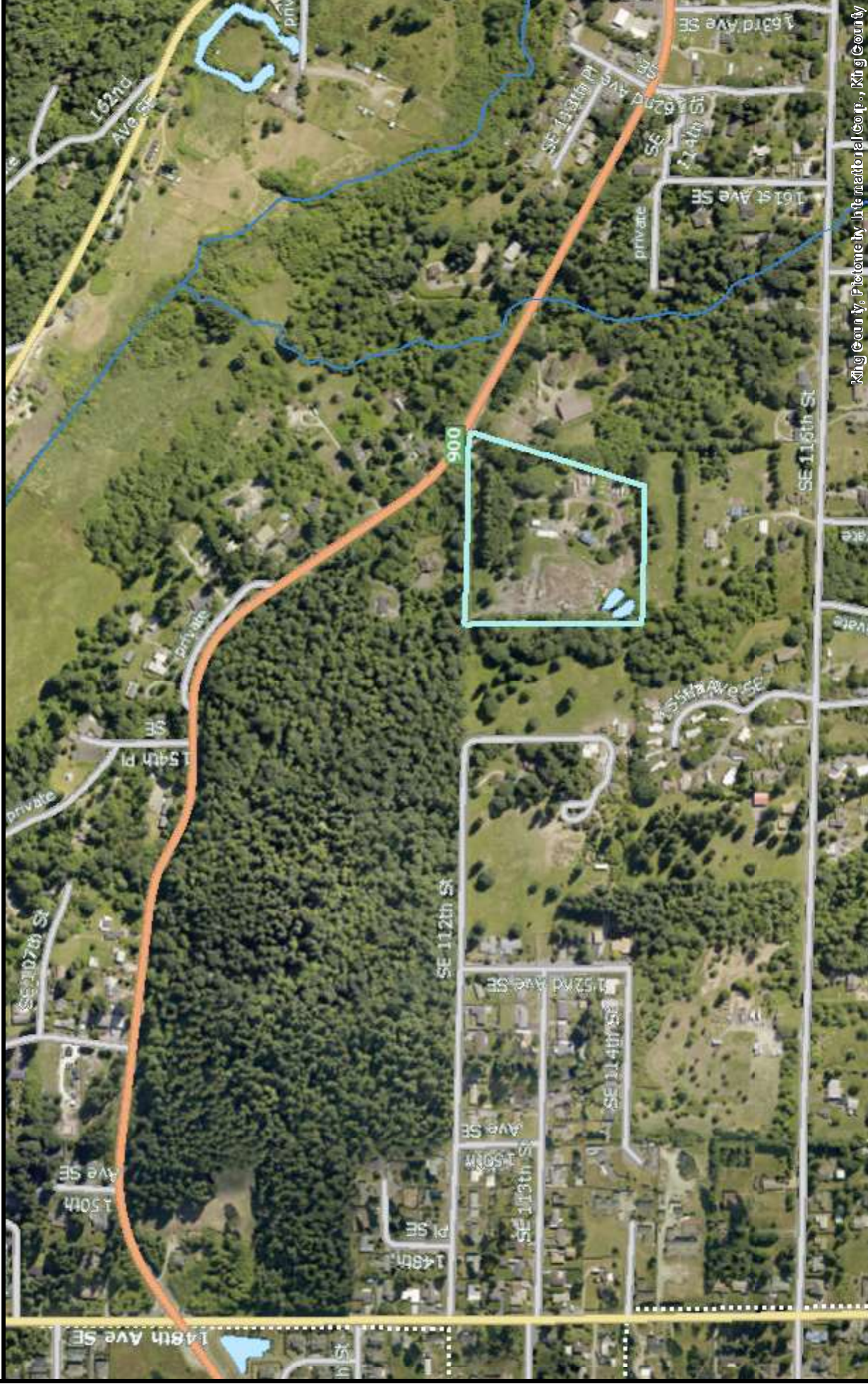


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Date: 7/24/2015

Notes:

Figure 3. Pillon Property Aerial View



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Date: 7/24/2015

Notes:













Worksheet 4

Surface Water Route

CSID: 4119

Site: Pillon Property

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drink. Wat. Stnd.		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
	Value	Score	Value	Score	Value	Score	WOE	Score
	(ug/L)		(ug/L)		(ug/L)			
Methylene chloride	5	8	1,600	3	6.00E-03	3	2.00E-03	3
PCBs	0.5	10	1,315	3	--	X	2.00E+00	7
Copper	1,000	4	--	X	4.00E-02	1	--	X
Lead	15	6	<0.001	10	--	X	--	X
Mercury	2	8	--	X	--	X	--	X
Maximum score:	10							
Bonus points:	2							
Source:	SHA Toxicity Database							
							Human Toxicity Score:	12
							Range:	1-12

1.2 Environmental Toxicity

Freshwater: X

Marine:

Substance	Acute Water	
	Quality Criterion	Score
	Value	
	(ug/L)	
Methylene chloride	--	X
PCBs	2	8
Copper	17	6
Lead	65	6
Mercury	1.4	8
Maximum score:	8	
Source:	SHA Toxicity Database	

Environmental Toxicity Score: 8
Range: 2-10

1.3 Substance Quantity

Amount: 304,920 square feet

Basis: PHSKC estimate

Source: PHSKC (2014)

Substance Quantity Score: 9
Range: 1-10

2.1 Containment

Description: Waste piles, outside with no run-on/run-off controls

Source: Ecology (2006)

Containment Score: 10

Range: 0-10

SUBSTANCE PARAMETER CALCULATIONS

Human Health Pathway

SUBh = (Human Toxicity + 3) x (Containment + 1) + Substance Quantity

174.0

Environmental Pathway

SUBe = (Environ. Toxicity + 3) x (Containment + 1) + Substance Quantity

130.0

Worksheet 4 (cont.)

Surface Water Route

CSID: 4119
Site: Pillon Property

2.0 MIGRATION POTENTIAL

2.2 Surface Soil Permeability

Description: Sand and gravel
Source: Well Log Viewer

Soil Permeability Score: 1
Range: 1-7

2.3 Total Annual Precipitation

Amount (in.): 45
Source: Precip Map

Annual Precipitation Score: 3
Range: 1-5

2.4 Maximum Two-Year/24-Hour Precipitation

Amount (in.): < 1
Source: Scoring Manual

24-Hour Precipitation Score: 1
Range: 1-5

2.5 Flood Plain

Classification: Not in floodplain
Source: iMap

Floodplain Score: 0
Range: 0-2

2.6 Terrain Slope

Degree of slope: 13% (120 ft over 940 ft)
Source: iMap

Terrain Slope Score: 5
Range: 1-5

MIGRATION PARAMETER CALCULATION

MIG = Soil Permeability + Annual Precip. + 24-Hour Precip. + Floodplain + Slope

10.0

Worksheet 4 (cont.)

Surface Water Route

CSID: 4119
Site: Pillon Property

3.0 TARGETS

3.1 Distance to Surface Water

Name:	Tributary 0291A to May Creek	
Distance (ft):	330	Distance to Surface Water Score: 10
Source:	iMap	Range: 0-10

3.2 Population Served within 2 Miles

Population:	0	Population Served Score: 0
Source:	Water System Data	Range: 0-75

3.3 Area Irrigated within 2 Miles

Basis:		
Area (acres):	0	Area Irrigated Score: 0
Source:	Well Log Viewer	Range: 0-30

3.4 Distance to Nearest Fishery Resource

Name:	May Creek	
Distance (ft):	1,200	Distance to Fishery Score: 9
Source:	iMap	Range: 0-12

3.5 Distance to Nearest Sensitive Environment

Name:	May Valley Park	
Distance (ft):	0	Distance to Sensitive Environment Score: 12
Source:	iMap	Range: 0-12

TARGET PARAMETER CALCULATIONS

Human Health Pathway

TARh= Dist. to Surface Water + Population Served + Area Irrigated 10.0

Environmental Pathway

TARe = Dist. to Surface Water + Dist. to Fishery + Dist. to Sensit. Environ. 31.0

Worksheet 4 (cont.)

Surface Water Route

CSID: 4119
Site: Pillon Property

4.0 RELEASE

Evid. of release? Yes
Source: Multiple

Release Score (REL): 5.0
Range: 0 or 5

SURFACE WATER ROUTE CALCULATIONS

Human Health Pathway

$$SW_h = (SUB_h \times 40/175) \times [(MIG \times 25/24)] + REL + (TAR_h \times 30/115) / 24$$

29.9

Environmental Pathway

$$SW_e = (SUB_e \times 40/175) \times \{(MIG \times 25/24)\} + REL + (TAR_e \times 30/115) / 24$$

53.0

Range: 0-100

Worksheet 5

Air Route

CSID: 4119

Site: Pilon Property

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

No scoring in Section 1.1.

1.2 Human Toxicity

Substance	Amb. Air Std. Value		Acute Toxicity Value		Chronic Toxicity Value		Carcinogenicity	
	(ug/m ³)	Score	(mg/m ³)	Score	(ug/m ³)	Score	WOE	Score
PCBs	0.00175	10	--	X	--	X	2.00E+00	7
Arsenic	0.000303	10	--	X	4.29E-06	10	1.51E+01	9
Cadmium	0.000238	10	25	10	2.86E-06	10	6.30E+00	7
Mercury	0.09	10	--	X	8.50E-05	10	--	X

Maximum score: 10

Bonus points: 2

Source: SHA Toxicity Database

Human Toxicity Score: 12

Range: 1-12

1.3 Mobility

Gaseous Mobility

Substance	Vapor Pressure		Henry's Law Value	
	Value (mm Hg)	Score	(atm-m ³ / mol)	Score
not used				

Maximum score: 0

Source: SHA Toxicity Database

Particulate Mobility

Soil type: Smoke from burning

Erodibility factor: 220

Climatic factor: 1-10

Mobility value: 3

Source: iMap

Mobility Score: 3

Range: 0-4

1.4 Human Toxicity/Mobility

Source: Scoring Manual

Human Tox/Mobil Score: 18

Range: 1-24

1.5 Environmental Toxicity/Mobility

Substance	Acute	
	Value (ug/m ³)	Score
PCBs	--	X
Arsenic	--	X
Cadmium	2.50E+01	10
Mercury	--	X

Maximum score 10

Source: SHA Toxicity Database

Environmental Toxicity Score: 10

Range: 1-10

Environmental Tox/Mobil Score: 15

Range: 1-24

1.6 Substance Quantity

Quantity: 677,600
Units: cubic yards
Basis: Estimated by PHSKC
Source: PHSKC (2014)

Substance Quantity Score: 10

Range: 1-10

2.1 Containment

Description: Waste piles, outdoors and uncovered; burning
Source: Ecology (2006)

Containment Score: 10

Range: 0-10

SUBSTANCE PARAMETER CALCULATIONS

Human Health Pathway

SUBh = (Human Tox/Mobil + 5) x (Containment +1) + Substance Quantity

263.0

Environmental Pathway

SUBe = (Environ. Tox/Mobil + 5) x (Containment +1) + Substance Quantity

230.0

Worksheet 5 (cont.)
Air Route

CSID: 4119
Site: Pillon Property

3.0 TARGETS

3.1 Nearest Population

Description: Residence to east
Distance (ft): 200
Source: iMap

Nearest Population Score: 10
Range: 0-10

3.2 Nearest Sensitive Environment

Description: May Valley Park
Distance (ft): 0
Source: iMap

Nearest Sensitive Environment Score: 10
Range: 0-7

3.3 Population within One-Half Mile

Number: 477
Source: CAPS

Population within Half Mile Score: 21.84
Range: 0-75

TARGET PARAMETER CALCULATIONS

Human Health Pathway

TARh= Nearest Population + Population within Half Mile

31.8

Environmental Pathway

TARe = Nearest Sensitive Environment

10.0

Worksheet 5 (cont.)
Air Route

CSID: 4119
Site: Pillon Property

4.0 RELEASE

Evid. of release? Yes
Source: Multiple

Release Score (REL): 5.0
Range: 0 or 5

AIR ROUTE CALCULATIONS

Human Health Pathway
 $AIR_h = (SUB_h \times 60/329) \times \{REL + (TAR_h \times 35/85)\} / 24$ 36.2

Environmental Pathway
 $AIR_e = (SUB_e \times 60/329) \times \{REL + (TAR_e \times 35/85)\} / 24$ 15.9

Range: 0-100

Worksheet 6

Groundwater Route

CSID: 4119

Site: Pillon Property

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human toxicity

Substance	Drink. Wat. Stnd Value		Acute Toxicity Value		Chronic Toxicity Value		Carcinogenicity	
	(ug/L)	Score	(ug/L)	Score	(ug/L)	Score	WOE	Score
Benzene	5	8	3,306	3	4.00E-03	3	5.50E-02	5
TCE	5	8	2,402	3	5.00E-04	5	4.64E-02	5
PCBs	0.5	10	1315	3	--	X	2.00E+00	7
Cadmium	5	8	225	5	5.00E-04	5	--	X
Mercury	2	8	--	X	--	X	--	X

Maximum score: 10

Bonus points: 2

Source: SHA Toxicity Database

Human Toxicity Score: 12

Range: 1-12

1.2 Mobility

Substance	Solubility Value	
	(ug/L)	Score
Benzene	1.75E+03	3
TCE	1.10E+03	3
PCBs	7.00E-01	0
Cadmium	K >1	3
Mercury	K >1	3

Maximum value: 3

Source: SHA Toxicity Database

Mobility Score: 3

Range: 1-3

1.3 Substance quantity

Quantity: 677,600

Units: cubic yards

Basis: Estimated by PHSKC

Source: PHSKC (2014)

Substance Quantity Score: 10

Range: 1-10

2.1 Containment

Description: Waste piles w/o liner, cover, leachate collection system, run-off controls

Source: Ecology (2006)

Containment Score: 10

Range: 0-10

SUBSTANCE PARAMETER CALCULATION

SUB = (Human Toxicity + Mobility + 3) x (Containment + 1) + Substance Quantity

208.0

Worksheet 6 (cont.)

Groundwater Route

CSID: 4119
Site: Pillon Property

2.0 MIGRATION POTENTIAL

2.2 Net precipitation

Amount (in.): 45
Source: Precip Map

Net Precipitation Score: 5
Range: 0-5

2.3 Subsurface Hydraulic Conductivity

Description: Sand and gravel
Source: Ecology (2006)

Hydraulic Conductivity Score: 4
Range: 1-4

2.4 Vertical Depth to Aquifer

Depth (ft): 30
Source: Well Log Viewer, shallowest well within 2 miles

Depth to Aquifer Score: 6
Range: 1-8

MIGRATION PARAMETER CALCULATION

MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity

15.0

Worksheet 6 (cont.)

Groundwater Route

CSID: 4119

Site: Pillon Property

3.0 TARGETS

3.1 Aquifer Usage

Description: Private wells with alternative source available

Source: Well Log Viewer

Aquifer Use Score: 4

Range: 1-10

3.2 Distance to Nearest Drinking Water Well

Distance (ft): 500

Source: Well Log Viewer

Well Distance Score: 5

Range: 0-5

3.3 Population Served by Drinking Water Wells within Two Miles

No. of people: 126

Source: Well Log Viewer (42 wells x 3 people/well)

Population Served Score: 11

Range: 0-100

3.4 Area Irrigated by Wells within Two Miles

Area (acres): 5

Source: Water System Data

Area Irrigated Score: 2

Range: 0-50

TARGET PARAMETER CALCULATION

22.5

TAR = Aquifer Use + Well Distance + Population Served + Area Irrigated

Worksheet 6 (cont.)

Groundwater Route

CSID: 4119

Site: Pillon Property

4.0 RELEASE

Evid. of release? No

Source: Multiple

Release Score (REL):

Range: 0 or 5

GROUND WATER ROUTE CALCULATION

GW = $(\text{SUB} \times 40/208) \times \{(\text{MIG} \times 25/17) + \text{REL} + (\text{TAR} \times 30/165)\} / 24$

Range: 0-100

Washington Ranking Method

Route Scoring Summary and Ranking Calculation

Site Name: Pillon Property
Site Address: 15753 Renton-Issaquah Road SE, Renton, WA 98059-6218
CSID: 4119
FSID: 1292568

Human Health Route Scores

Pathway	Score	Quintile
Surface water	29.9	5
Air	36.2	4
Ground water	43.6	4

Quintile	Value
High (H)	5
Middle (M)	4
Low (L)	4

$$(H^2 + 2M + L) / 8$$

Human Health Pathway Quintiles - February 2015

Quintile	Surface Water		Air		Ground Water	
1	<=	7.9	<=	8.4	<=	23.5
2		8.0		15.9		32.8
3		15.5		24.9		40.1
4		22.7		39.3		50.0
5	>=	29.9	>=	39.4	>=	50.1

Human Health Priority Bin Score: 5

Environmental Route Scores

Pathway	Score	Quintile
Surface water	53.0	5
Air	15.9	3

Quintile	Value
High (H)	5
Low (L)	3

$$(H^2 + 2L) / 7$$

Environmental Pathway Quintiles - February 2015

Quintile	Surface Water		Air	
1	<=	11.0	<=	1.4
2		11.1		2.4
3		24.0		16.4
4		32.0		28.1
5	>=	50.0	>=	28.2

Environmental Priority Bin Score: 5

FINAL MATRIX RANKING

Human Health Priority	Environmental Priority					
	5	4	3	2	1	n/a
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
n/a	3	4	5	5	5	NFA

n/a - not applicable

NFA - no further action

Site Rank: 1